

# 4-BAND STEREO RADIO CASSETTE RECORDER

MODEL NO. **TPR-905E,K**

**AIWA**®  
[SERVICE MANUAL]



Set using ISO screws



Shown above is TPR-905E

DATE OF ISSUE 8/1978

## SPECIFICATIONS

### GENERAL

**Semiconductors:**

4 ICs, 27 transistors, 15 diodes,

1 LED, 1 FET

**Power source:**  
Batteries, DC 7.5V (UM-1 x 5)  
AC 110~120V/220~240V (E model)  
AC 120 V/240 V (K model)  
(switchable) 50/60 Hz

16W (E model)

15W (K model)

100 mm  $\phi$  x 2

415(W) x 268(H) x 108(D) mm

Weight: 4.3 kg (w/batteries)

Supplied accessories: AC power cord x 1

Cassette tape x 1

Batteries (UM-1) x 5

Head cleaning stick x 1

Erase plug x 2

### RADIO SECTION

**Circuit:**

Superheterodyne

**Frequency range:**

FM 87.5~108 MHz

SW 5.7~19 MHz

MW 515~1650 kHz

LW 145~320 kHz

**Intermediate frequency:**

FM 10.7 MHz

SW,MW,LW 468 kHz

FM 4  $\pm$  3 dB (at 88 MHz)

3  $\pm$  3 dB (at 98, 108 MHz)

**Sensitivity:**

(at S/N 6 dB)

SW 28  $\pm$  5 dB (at 5.9 MHz)

20  $\pm$  5 dB (at 12, 18 MHz)

MW 43  $\pm$  4 dB (at 600 kHz)

42  $\pm$  4 dB (at 1000, 1400 kHz)

LW 53  $\pm$  5 dB (at 150 kHz)

50  $\pm$  5 dB (at 220, 300 kHz)

**FM stereo separation:** 32  $\pm$  5 dB (at 1 kHz)

**Antennas:** Built-in whip antenna for FM, SW

Built-in ferrite bar antenna for MW,LW

### TAPE RECORDER SECTION

**Tape speed:** 4.75 cm/sec.  $\pm$  2.5%

**Recording system:** AC bias

**Erasing system:** AC erase

**Record bias frequency:** 50  $\pm$  1 kHz

**Distortion:** 1.3  $\pm$  1.0% (PB)

1.7  $\pm$  1.0% (REC/PB)

Frequency response: 80~10 kHz

**Signal to noise ratio:** 56/50  $\pm$  4 dB [DC/AC] (PB)

(Un-Weighted) 50/47  $\pm$  4 dB [DC/AC] (REC/PB)

**Erasing ratio:** 63  $\pm$  5 dB

**Separation:** 40  $\pm$  5 dB (REC/PB)

**Maximum output power:** 5.4W (2.7W + 2.7W)

**Head:** Super parmalloy head

**FF & rewind time:** 80  $\pm$  5 sec. (w/C-60 cassette)

**Automatic stop system:** Mechanical full auto-stop

**Automatic shut-off action time:** Less than 10 sec.

**Pinch roller pressure:** 300  $\pm$  50 g

**Wow & Flutter:** Less than 0.17% (WRMS)

**Take-up torque:** 50  $\pm$  10 g-cm

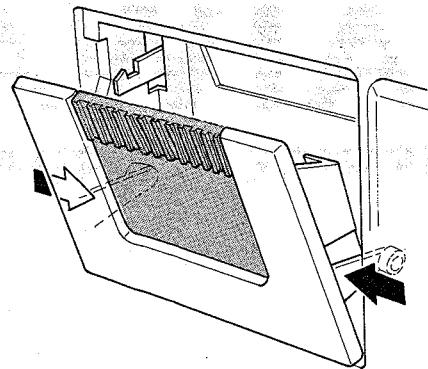
**FF & rewind torque:** 100  $\pm$  10 g-cm

- The specifications and external appearance of this set are subject to change without prior notice.

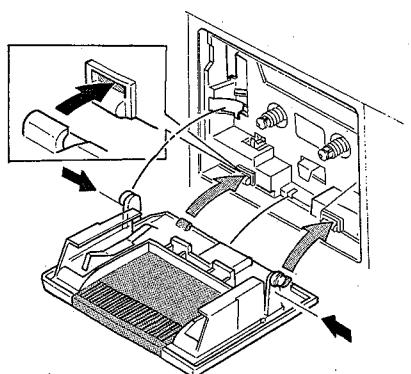
## DISASSEMBLY INSTRUCTIONS

**To Remove Cassette Lid**

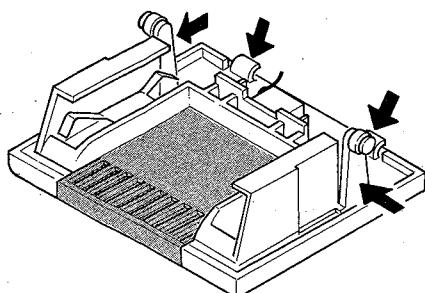
Pull toward you while pushing the part marked with the arrow.

**To Install Cassette Lid**

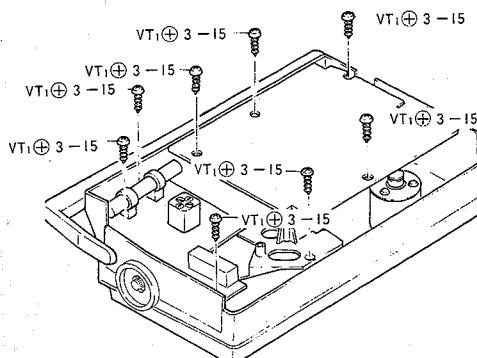
Attach the cassette lid while pushing the part marked with the arrow.



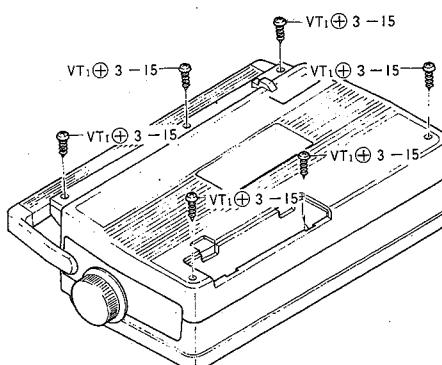
Note: Do not remove or assemble the cassette lid by force as the parts of the cassette lid indicated by arrows might be broken.

**To Remove Chassis**

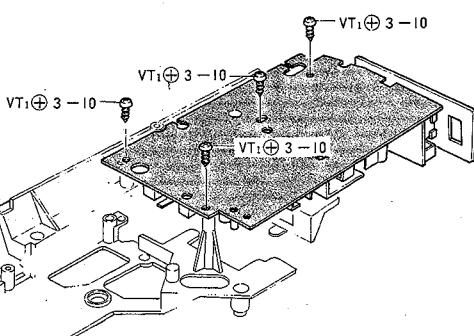
- 1) Remove the control knobs.
- 2) Remove 8 screws.

**To Remove Back Cover**

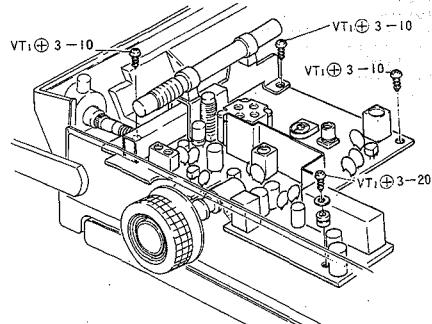
Remove 6 screws.

**To Remove Audio Circuit Board**

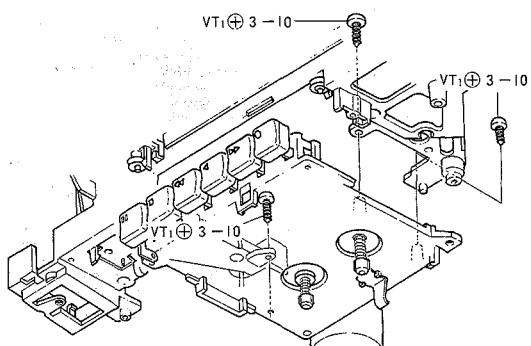
Remove 4 screws.



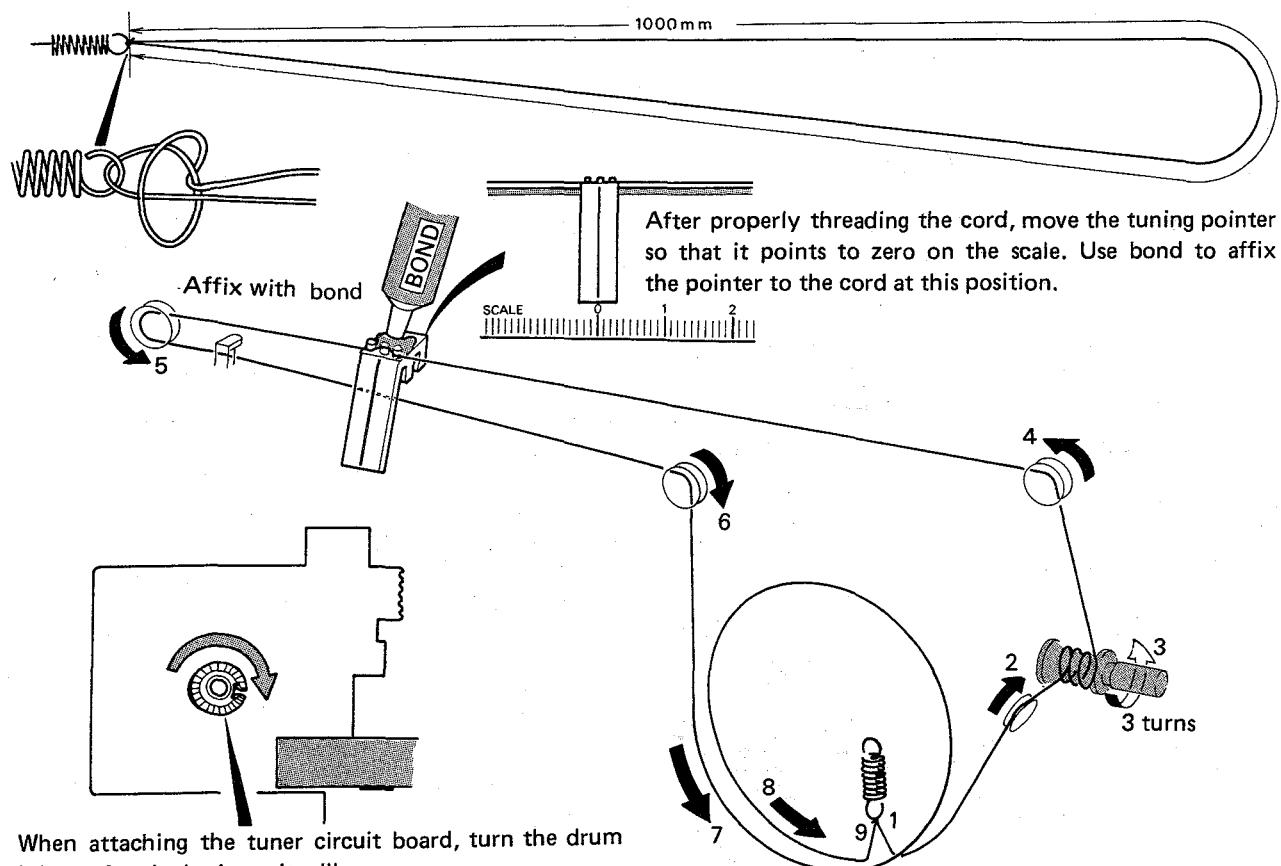
**To Remove Tuner Circuit Board**  
Remove 4 screws.



**To Remove Mechanism**  
Remove the counter belt and 3 screws.

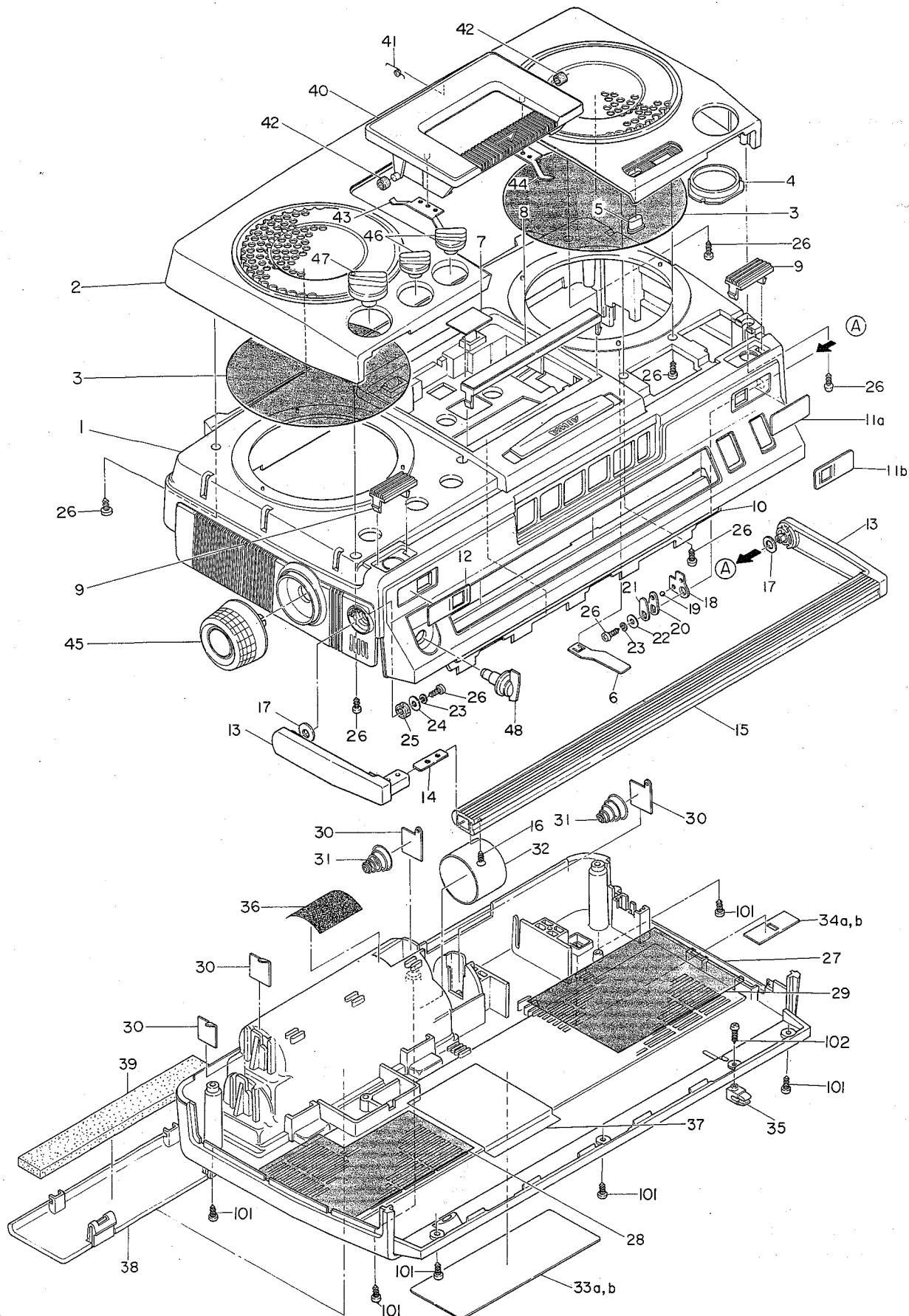


**DIAL CORD STRINGING**



When attaching the tuner circuit board, turn the drum joint as far clockwise as it will go.

## EXPLODED VIEW-1



## MECHANICAL PARTS

## PARTS LIST

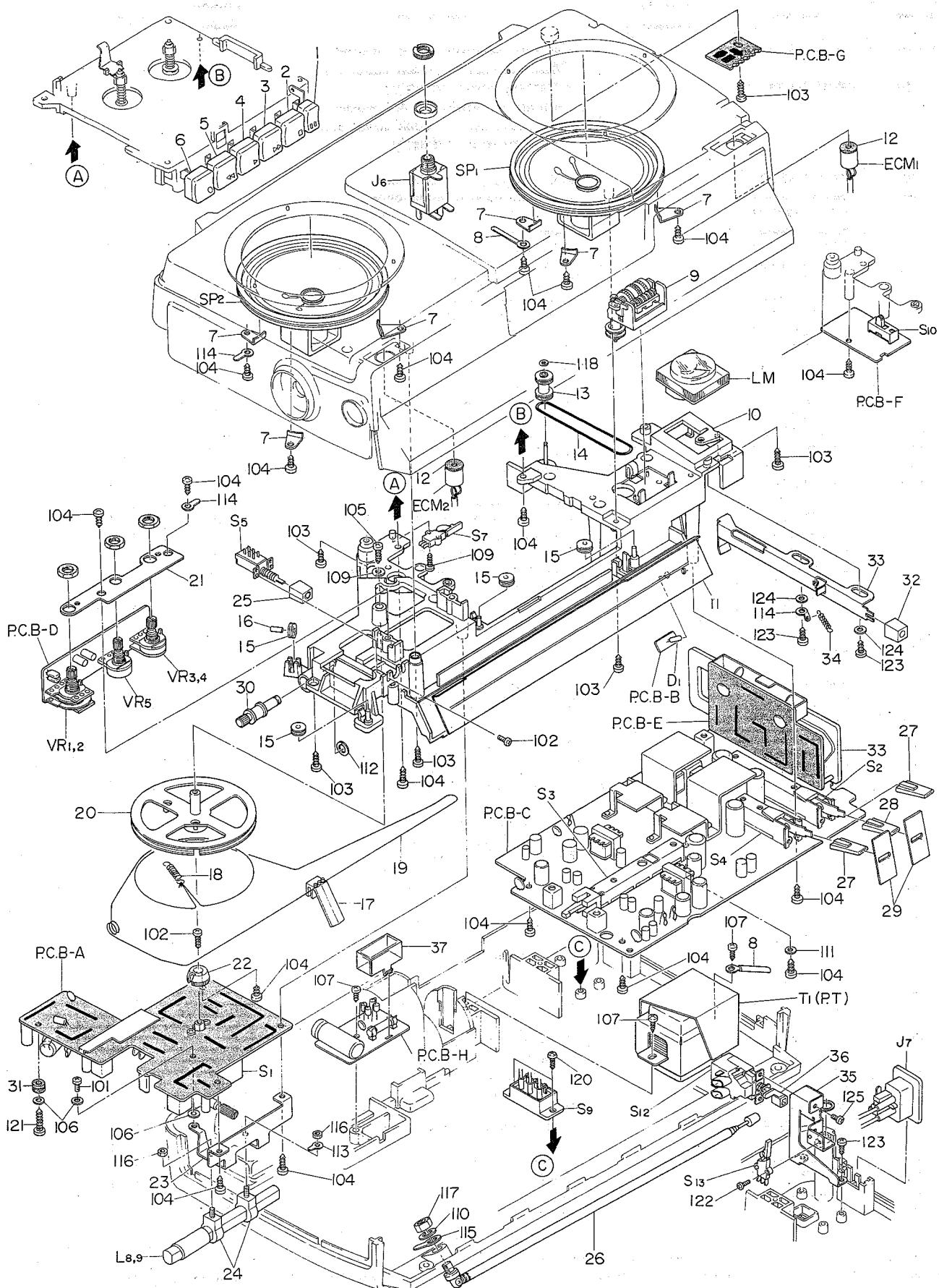
■ \* mark in this part list shows exclusive part  
(which is used) for only Model TPR-905.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1~39	09-017-475-01		Cabinet assembly - "E" model (Main case ass'y + Back cover ass'y + Battery room lid ass'y)		
1~39	09-017-478-01		Cabinet assembly - "K" model (Main case ass'y + Back cover ass'y + Battery room lid ass'y)		
1~26	09-017-476-01		Main case ass'y (E model only)		
1~26	09-017-479-01		Main case ass'y (K model only)		
1-1	82-539-060-01		Main case	*	1
1-2	82-539-040-01		Panel, Front	*	1
1-3	82-539-043-01		Dust screen cloth φ114	*	2
1-4	82-539-036-01		Ring	*	1
1-5	82-539-014-01		Push button (RESET)	*	1
1-6	82-533-214-01		Plate spring, Reset	TPR-920	1
1-7	82-386-033-01		Label, Tape indication	AD-1250	1
1-8	82-538-009-01		Head lid		1
1-9	82-539-010-01		Grille, ECM	*	2
1-10	82-539-003-01		Window, Tuning dial	*	1
1-11a	82-539-062-01		Name plate (E model only)	*	1
1-11b	82-539-063-01		Name plate, Power (K model only)	*	1
1-12	82-539-028-01		Name plate, LOUDNESS	*	1
1-13	82-535-024-01		Handle arm	TPR-915	2
1-14	82-535-208-01		Nut, Handle grip	TPR-915	2
1-15	82-535-025-01		Handle grip	TPR-915	1
1-16	82-237-075-01		Q + 2.6-10		4
1-17	82-422-261-01		Poly-slider washer		2
1-18	82-461-353-01		Actuating plate, Carrying handle	TPR-930	1
1-19	87-073-006-01		Steel ball 3φ		1
1-20	82-461-303-01		Pressure plate, Carrying handle	TPR-930	1
1-21	82-461-324-01		Pressure plate spring, Carrying handle	TPR-930	1
1-22	87-410-315-01		W3-8-0.5		1
1-23	87-421-306-01		SW-3		2
1-24	87-081-841-01		W3-10-0.5		1
1-25	82-461-366-01		Felt, Carrying handle	TPR-930	1
1-26	87-351-098-01		VT <sub>1</sub> + 3-14		9
27~37	09-017-477-01		Back cover ass'y (E model only)		
27~37	09-017-480-01		Back cover ass'y (K model only)		
1-27	82-539-005-01		Back cover	*	1
1-28	82-539-032-01		Dust screen cloth	*	1
1-29	82-533-048-01		Dust screen cloth, Back cover	TPR-920	1
1-30	87-038-032-01		Terminal plate, Battery		4
1-31	82-222-036-01		Spring, Battery		2
1-32	82-535-207-01		Pipe, Battery	TPR-915	1
1-33a	82-539-051-01		Name plate, Spec. (E model only)	*	1
1-33b	82-539-050-01		Name plate, Spec. (K model only)	*	1
1-34a	82-539-033-01		Name plate, Voltage selector (E model only)	*	1
1-34b	82-539-057-01		Name plate, Voltage selector (K model only)	*	1
1-35	82-440-038-01		Holder, Antenna		1
1-36	82-533-227-01		Himeron cloth	TPR-920	1
1-37	82-238-609-01		Shield paper		1
1-38	82-538-029-01		Battery room lid		1
1-39	82-533-223-01		Cushion, Battery room lid	TPR-920	1
40~44	09-017-443-01		Cassette lid ass'y		
1-40	82-539-006-01		Cassette lid ass'y	*	1
1-41	82-294-216-01		Spring, Cassette lid	TP-762	1
1-42	82-461-319-01		Cushion, Cassette lid	TPR-930	2
1-43	82-432-239-01		Pressure plate spring R, Cassette lid	TPR-212	1
1-44	82-432-238-01		Pressure plate spring L, Cassette lid	TPR-212	1
1-45	82-535-044-01		Tuning knob ass'y	TPR-915	1
1-46	82-539-020-01		Knob, TONE·BALANCE	*	2
1-47	82-539-017-01		Knob, VOLUME	*	1
1-48	82-539-045-01		Selector knob	*	1

Ref. No.	Part No.	Description	Q'ty
1-101	87-351-099-01	VT <sub>1</sub> + 3-15	6

Ref. No.	Part No.	Description	Q'ty
1-102	87-341-074-01	UT <sub>1</sub> + 2.6-8	1

## EXPLODED VIEW-2



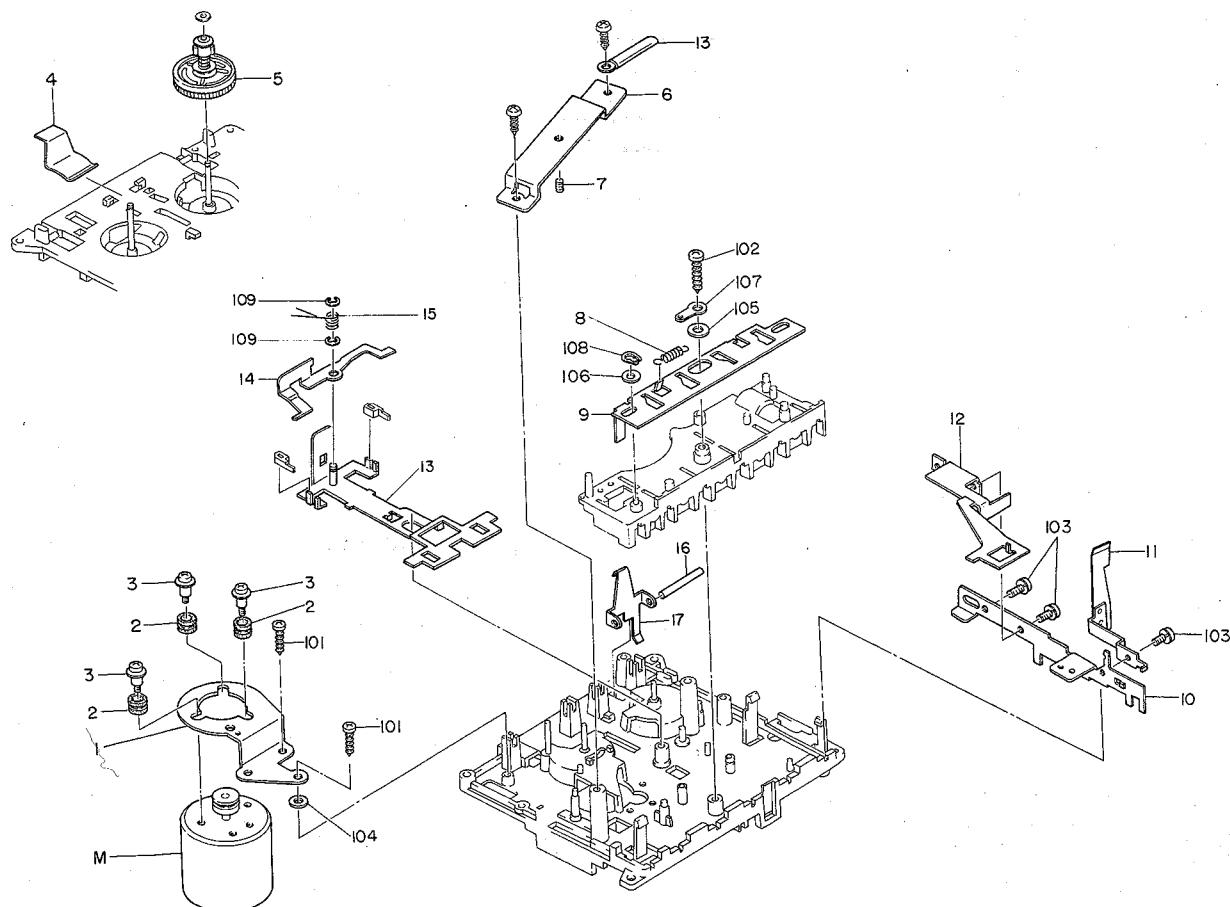
PRINTED ON COLORED PAPER

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
2-1	82-531-023-01		Button, PAUSE		1
2-2	82-531-022-01		Button, STOP		1
2-3	82-531-019-01		Button, FF		1
2-4	82-531-018-01		Button, PLAY		1
2-5	82-531-020-01		Button, REW		1
2-6	82-531-021-01		Button, REC		1
2-7	82-274-222-01		Metal fitting, Speaker		6
2-8	87-038-039-01		Wire, Binder		2
2-9	87-040-107-01		Counter		1
2-10	09-017-402-01		Main chassis ass'y		1
2-11	82-539-056-01		Dial plate	*	1
2-12	81-064-059-01		Holder, ECM		2
2-13	82-422-230-01		Relay pulley		1
2-14	82-533-219-01		Belt, Counter		1
2-15	81-302-107-01		Roller		4
2-16	82-422-753-01		Shaft		1
2-17	82-539-011-01		Dial pointer	*	1
2-18	82-439-359-01		Drum spring	TPR-300	1
2-19	87-096-045-01		Dial string		1.1m
2-20	82-439-310-01		Drum, Tuning dial	TPR-300	1
2-21	82-539-202-01		Holder, Volume	*	1
2-22	82-439-311-01		Drum joint	TPR-300	1
2-23	82-535-229-01		Holder, Bar antenna	TPR-915	1
2-24	81-384-209-01		Holder A, Antenna		1
2-25	82-539-039-01		Push button	*	1
2-26	87-043-040-01		Whip antenna		1
2-27	82-539-016-01		Lever switch (GRY)	*	E: 1 / K: 2
2-28	82-599-015-01		Lever switch (RED) (E model only)		1
2-29	82-599-030-01		Blind plate		2
2-30	82-533-206-01		Shaft, Tuning dial	TPR-920	1
2-31	87-087-029-01		Rubber cushion		1
2-32	82-539-023-01		Push button (RED) (K model only)	*	1
2-33	82-539-210-01		Lever, Power switch (K model only)	*	1
2-34	82-283-289-01		Spring, Play idler lever (K model only)		1
2-35	82-539-211-01		Holder, Power switch (K model only)	*	1
2-36	82-539-213-01		Sub lever, Power switch (K model only)	*	1
2-37	82-435-212-01		Cover, Fuse		1

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
2-101	87-263-094-01	V + 3-6	1	2-114	87-450-414-01	LB-4	3
2-102	87-263-033-01	V + 2-4	2	2-115	87-450-418-01	LB-8	1
2-103	87-351-099-01	VT <sub>1</sub> + 3-15	8	2-116	87-391-005-01	N-2	2
2-104	87-351-096-01	VT <sub>1</sub> + 3-10	20	2-117	87-391-028-11	N-5	1
2-105	87-351-098-01	VT <sub>1</sub> + 3-14	1	2-118	87-081-464-01	PW1.8-5-0.5	1
2-106	87-081-015-01	FW3-8-0.5	2	2-119	87-341-037-01	UT <sub>1</sub> + 2-10	1
2-107	87-341-096-01	UT <sub>1</sub> + 3-10	3	2-120	87-341-074-01	UT <sub>1</sub> + 2.6-8	2
2-108	87-080-074-01	VS + 2.6-8	1	2-121	87-351-102-11	VT <sub>1</sub> + 3-20	1
2-109	87-481-165-01	W3-10-0.5	1	2-122	87-051-036-01	U + 2-8	1
2-110	87-421-309-01	SW-5	1	2-123	87-341-093-01	UT <sub>1</sub> + 3-14	2
2-111	87-081-015-01	FW3-8-0.5	1	2-124	87-410-314-01	W3-8-0.3	2
2-112	87-081-570-01	PW5-10-0.6	1	2-125	87-251-094-21	U + 3-6	2
2-113	87-450-411-01	LB-1	1				

## EXPLODED VIEW-3

As this is a PM-1 mechanism, the exploded view is omitted (see the supplement PM-1 mechanism adjustment manual). The exploded view below shows the additional mechanism of the PM-1. Also shown are the attachments of the motor and a list of such.



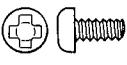
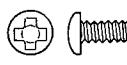
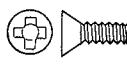
Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
3-1	82-446-203-01		Holder, Motor	TPR-605	1
3-2	87-087-029-01		Rubber cushion		3
3-3	87-081-483-01		Motor screw, M2.6		3
3-4	82-294-213-01		Pressure plate spring, Cassette	TP-762	1
3-5	82-439-460-01		Take-up reel platform ass'y	TPR-300	1
3-6	82-474-219-01		Holder F		1
3-7	82-385-311-01		Thrust screw	AD-6300	1
3-8	82-283-289-01		Spring, Play idler lever		1
3-9	82-294-215-01		Plate, One-finger recording	TP-762	1
3-10	82-294-217-01		Lever, REC	TP-762	1
3-11	82-539-203-01		Plate spring ass'y, REC	*	1
3-12	82-294-214-01		Lever, One-finger recording	TP-762	1
3-13	82-439-270-01		Brake plate ass'y	TPR-300	1
3-14	82-439-271-01		Lever, CrO <sub>2</sub> selector	TPR-300	1
3-15	82-439-274-01		Spring, CrO <sub>2</sub> selector lever	TPR-300	1
3-16	82-439-398-01		Shaft, CrO <sub>2</sub> selector plate spring	TPR-300	1
3-17	82-533-212-01		Plate spring, CrO <sub>2</sub> selector	TPR-920	1

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
3-101	87-351-095-01	VT <sub>1</sub> + 3-8	2	3-106	87-410-314-01	W3-8-0.3	1
3-102	87-081-556-01	VT <sub>1</sub> + 3-21	1	3-107	87-450-414-01	LB-4	1
3-103	87-480-071-01	VS + 2.6-4	3	3-108	87-442-003-01	STP-3	1
3-104	87-410-315-01	W3-8-0.5	1	3-109	87-441-006-01	STE-2.3	2
3-105	87-081-165-01	W3-10-0.5	1				

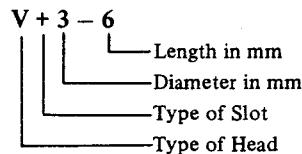
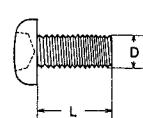
The following is the part number list of the ~~marked~~ marked parts of the PM-1 mechanism.

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
1-13	82-385-332-01	Spring B, Head adjusting	1	2-33	82-294-217-01	REC lever ass'y	1
1-14	87-046-126-01	Rec./Pb head	1	2-49	82-442-237-11	Main belt	1
1-25	82-439-237-01	Cassette lock lever	1	2-50	82-385-307-01	Flywheel ass'y	1
1-31	87-046-127-01	Erase head	1	2-51	82-385-314-21	Rubber belt	1
2-31	87-480-071-01	Mounting screw, REC plate spring	1	2-52	82-385-311-01	Screw for thrust	1
2-32	82-533-216-01	Plate spring, REC	1	2-53	82-474-219-01	Lower shaft bearing plate	1
				2-60	82-385-309-11	Worm gear, B ass'y	1

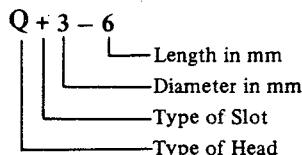
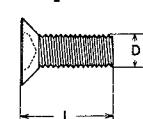
## HARDWARE NOMENCLATURE

V:	Pan head screw		STP:	Powerful stop ring	
U:	Binding head screw		STE:	E ring	
Q:	Flat countersunk head screw		W:	Washer	
VT1:	Pan head tapping screw		FW:	Fiber washer	
UT1:	Binding head tapping screw		PW:	Poly-slider washer	
VS:	Pan head screw with spring washer		SW:	Spring washer	
			N:	Nut	
			LB:	Lug terminal plate	

### Example:



### Example:



## ACCESSORIES/PACKAGE

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1	82-539-855-01		Printed indiv., Packing	*	1
2	82-539-852-01		Cushion L, Printed indiv.	*	1
3	82-539-853-01		Cushion R, Printed indiv.	*	1
4	87-051-137-01		Poly-vinyl sack (for AC cord)		1
5	87-056-606-01		Poly-vinyl sack (for case)		1
6	82-539-907-01		Label, POP	*	1
7a	82-539-911-01		Instructions booklet (E model only)	*	1
7b	82-539-913-01		Instructions booklet (K model only)	*	1
8	87-051-171-01		Poly-vinyl sack (for instruction)		1
9	87-056-009-01		Distributors list		1
10	80-291-658-01		Tape cassette DMC-147		1
11	87-032-478-01		DIN erase plug		1
12	87-034-883-01		AC power cord (E model only)		1
13	87-034-871-01		AC power cord (K model only)		1
14	87-047-061-01		Battery, SUM-1AE		5
15	87-056-008-01		Label, AC power cord (K model only)		1
16	87-056-016-01		Tag, Voltage selector (K model only)		1
17	87-058-024-01		Head cleaning pole ass'y		1



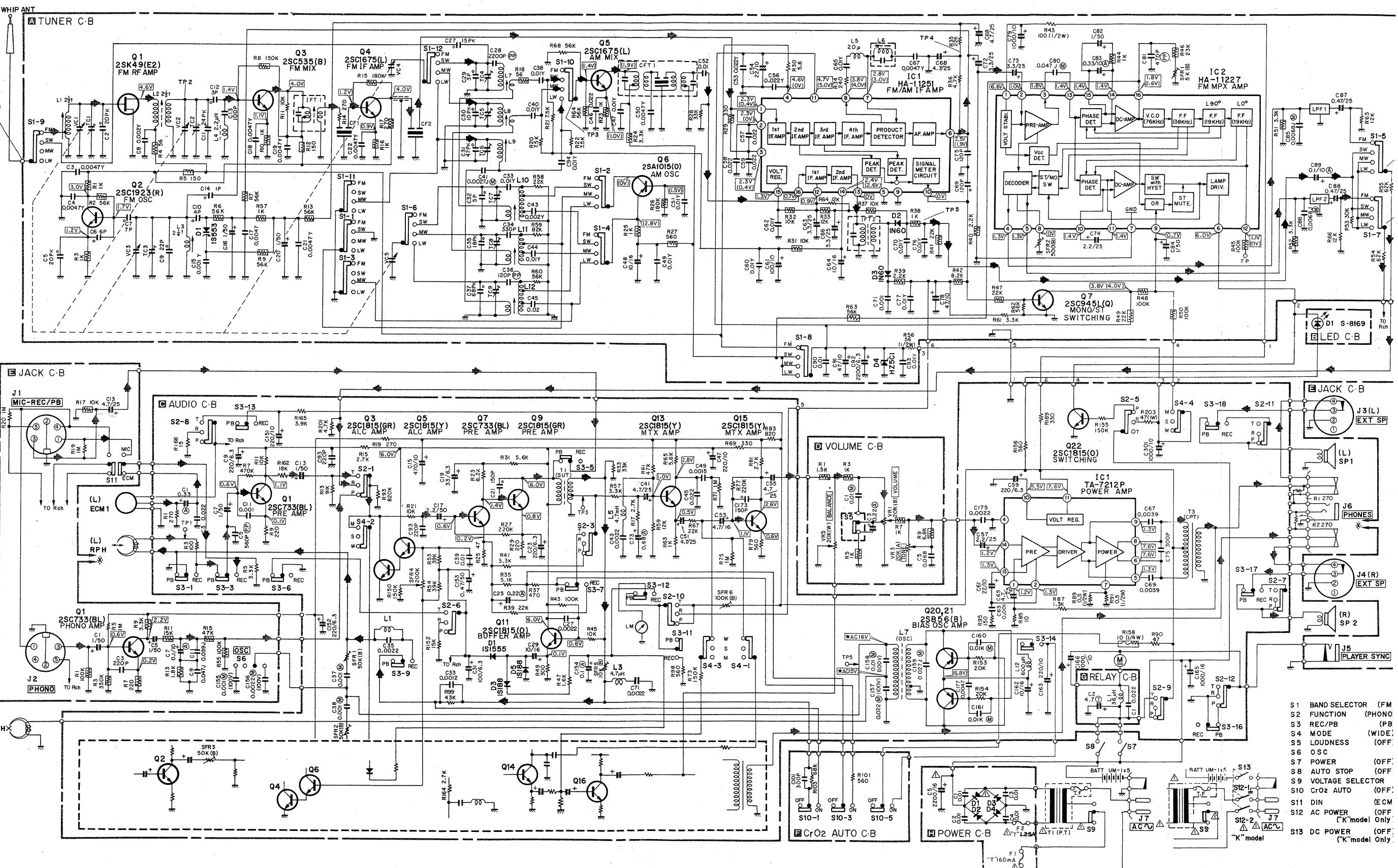
780825(1)-Z

---

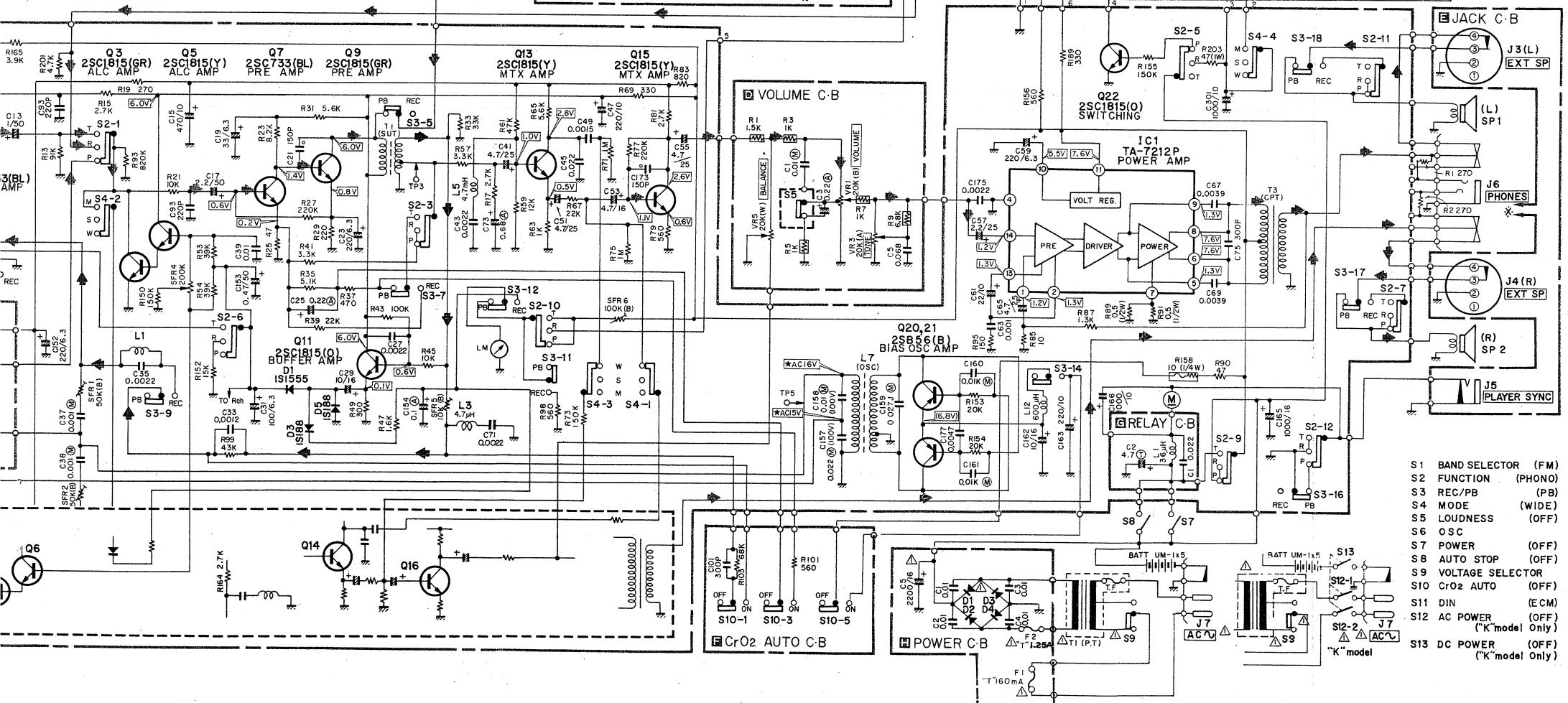
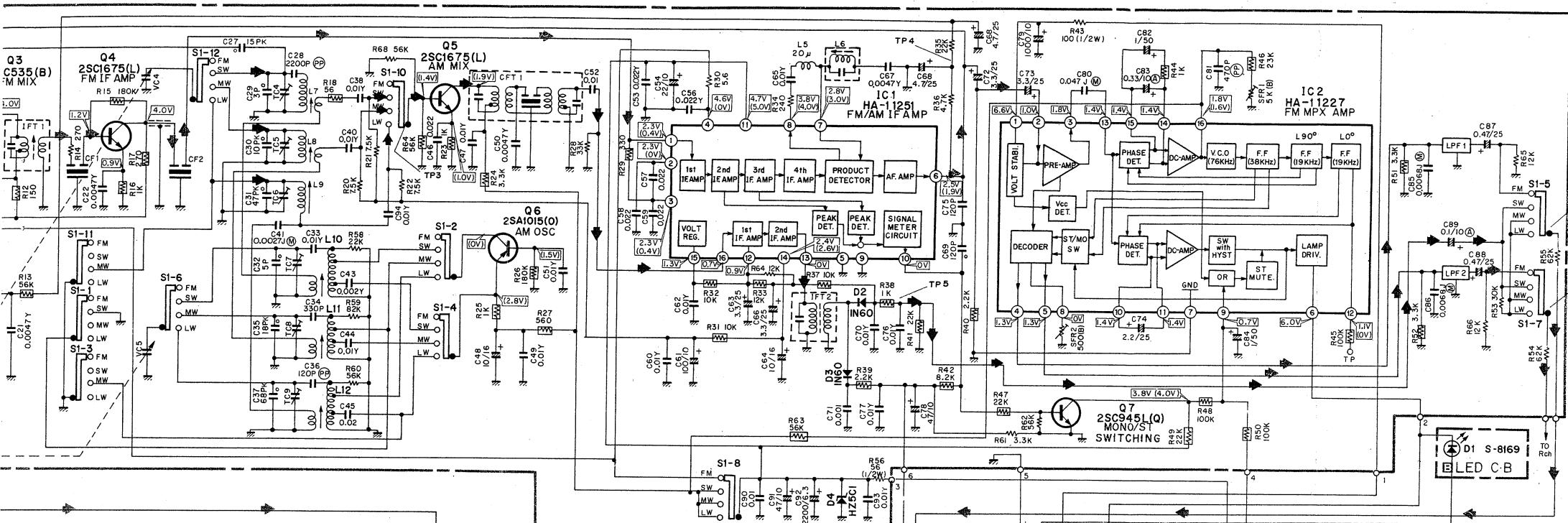
**AIWAco.,LTD.**

## SCHEMATIC DIAGRAM

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



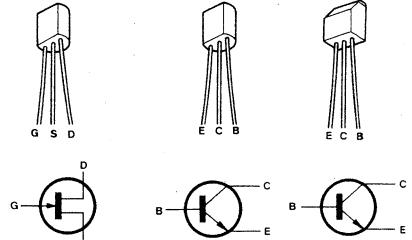
5 6 7 8 9 10 11 12 13 14 15 16



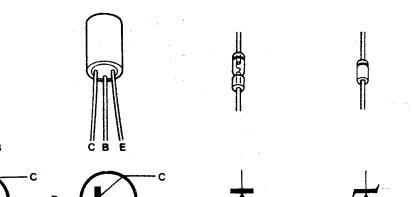
## NOTES:

- B (+) power supply
- Signal path
- Rec path, AM signal path.
- The voltage is the reference value measured with a tester (50k-ohms/V DC) when there are no signals. But ( ) is with AM reception or recording.
- An asterisk ( ) indicates that the value was measured with a vacuum-tube voltmeter during recording.
- Resistors with no designation have a rated power of 1/2W and a tolerance of ±5%.
- Capacitors with no designation have a dielectric strength of less than 50V.
- Ceramic capacitor symbols:
  - For temperature compensation (SL)
  - High dielectric constant system (YY)
  - High dielectric constant system (YP)
- The only capacitor tolerances indicated are ±5% (J) and ±10% (K).
- Explanation of symbols:
  - (M) Mylar capacitor
  - (S) Styrol capacitor
  - (PP) Polypropylene film capacitor
  - (A) Aluminum solid capacitor
  - (T) Tantalum capacitor
  - (W) Printed resistor
  - (F) Fuse resistor
- △: Symbol is used to indicate that a specific component must be replaced only by the component for safety reasons.

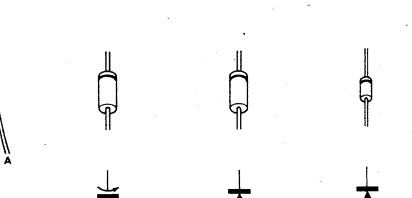
This schematic diagram is subject to change without notice in the interests of improved performance.



2SK49  
2SC1923  
2SC1675  
2SC945  
2SC73  
2SC1815



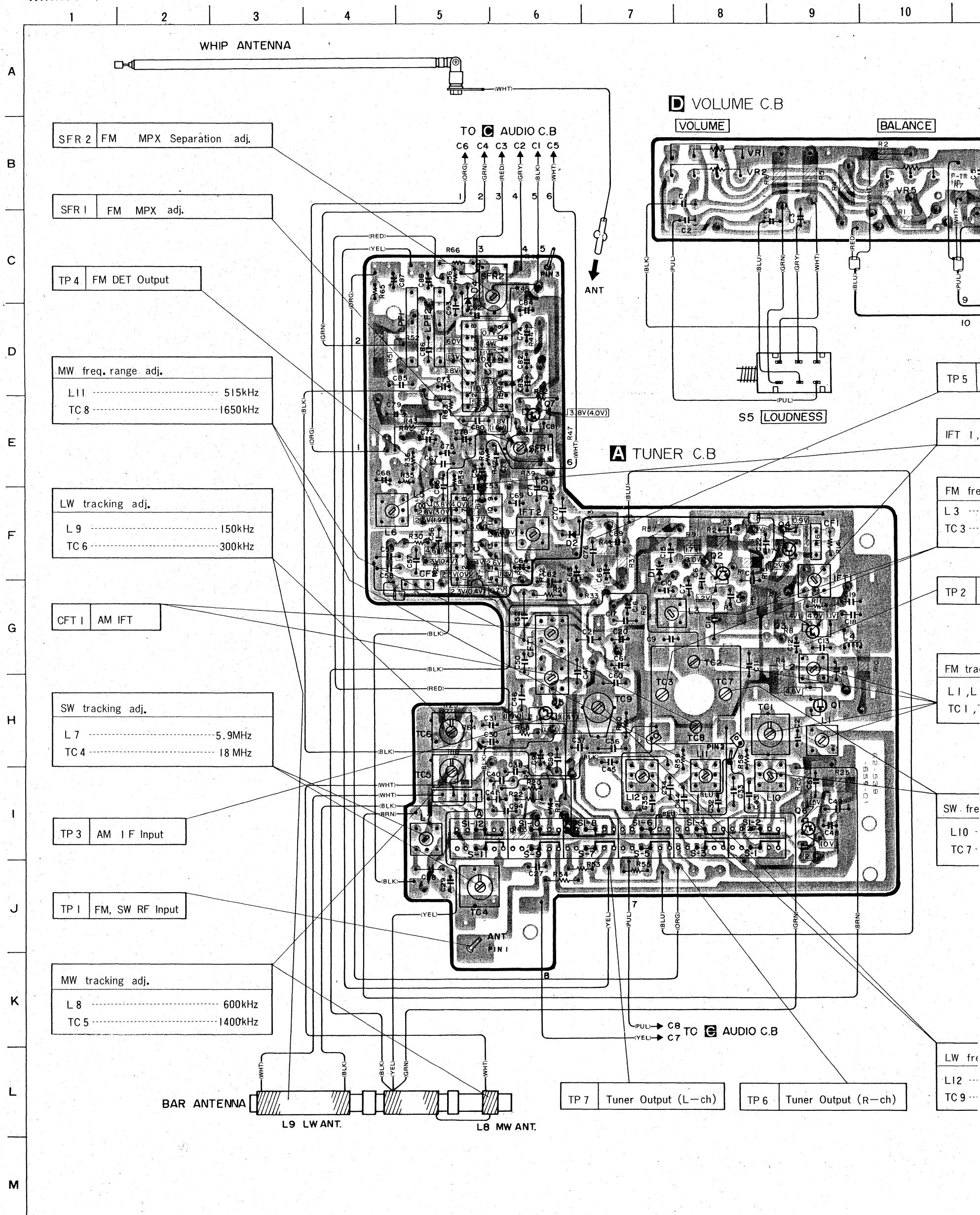
2SB56  
IS188  
IN60



HZ5C1  
S8169  
IS553  
IS1885  
IS1555

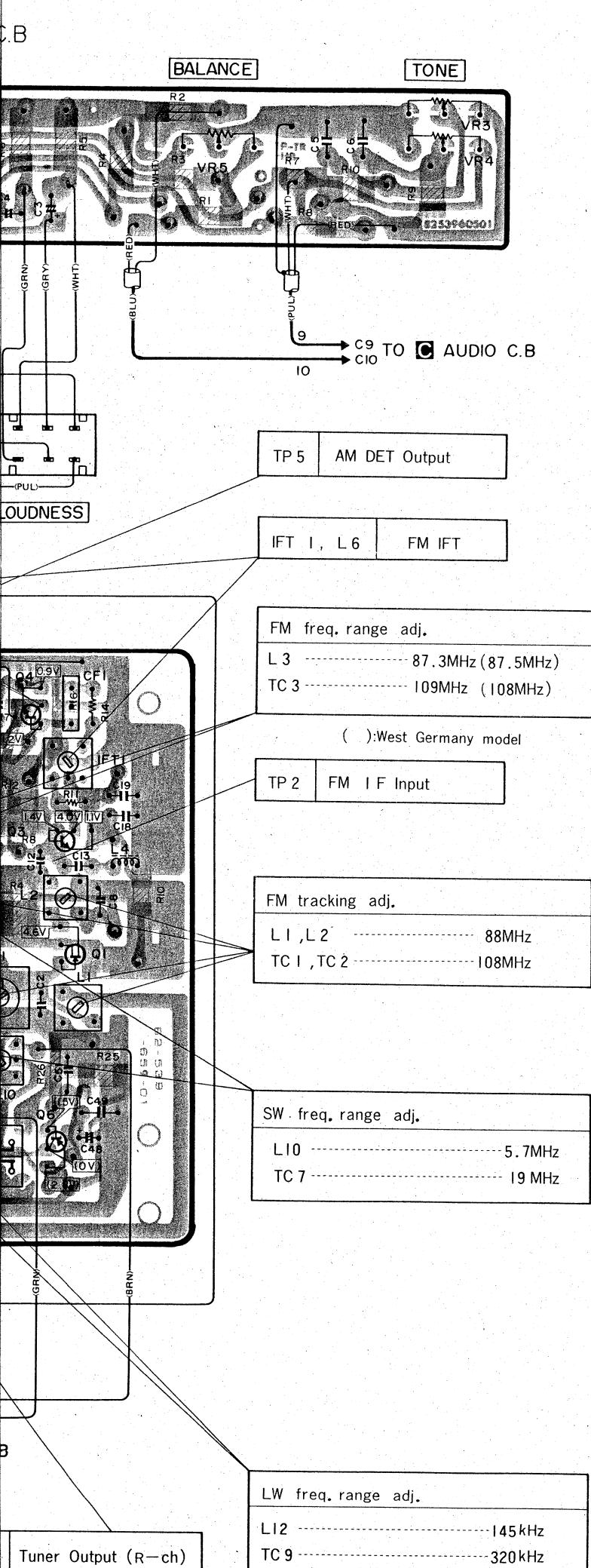
S1 BAND SELECTOR (FM)  
S2 FUNCTION (PHONO)  
S3 REC/PB (PB)  
S4 MODE (WIDE)  
S5 LOUDNESS (OFF)  
S6 OSC  
S7 POWER (OFF)  
S8 AUTO STOP (OFF)  
S9 VOLTAGE SELECTOR  
S10 CrO<sub>2</sub> AUTO (OFF)  
S11 DIN (E.CM)  
S12 AC POWER ("K" model Only)  
S13 DC POWER (OFF ("K" model Only)

## WIRING-1

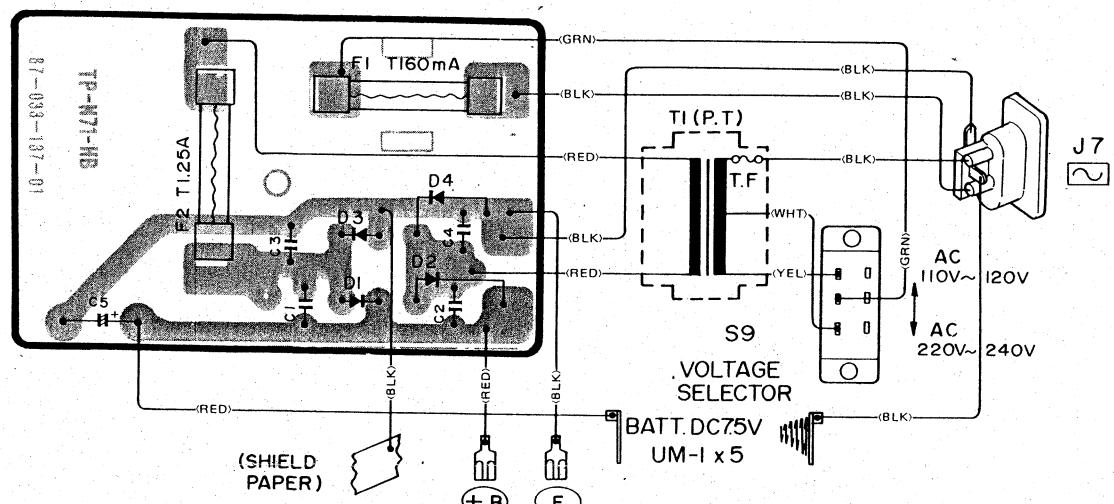


NOTES (1) B (+) Pattern      Component side pattern      Others pattern (2) The voltage is the reference value m

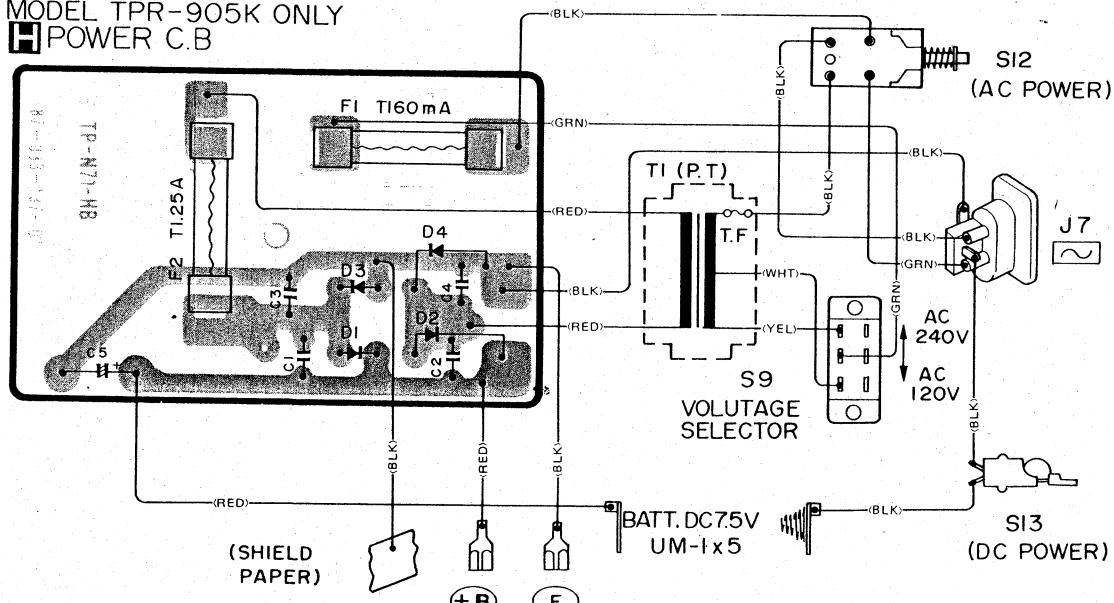
9 10 11 12 13 14 15 16 17 18 19



MODEL TPR-905E ONLY  
H POWER C.B



MODEL TPR-905K ONLY  
H POWER C.B

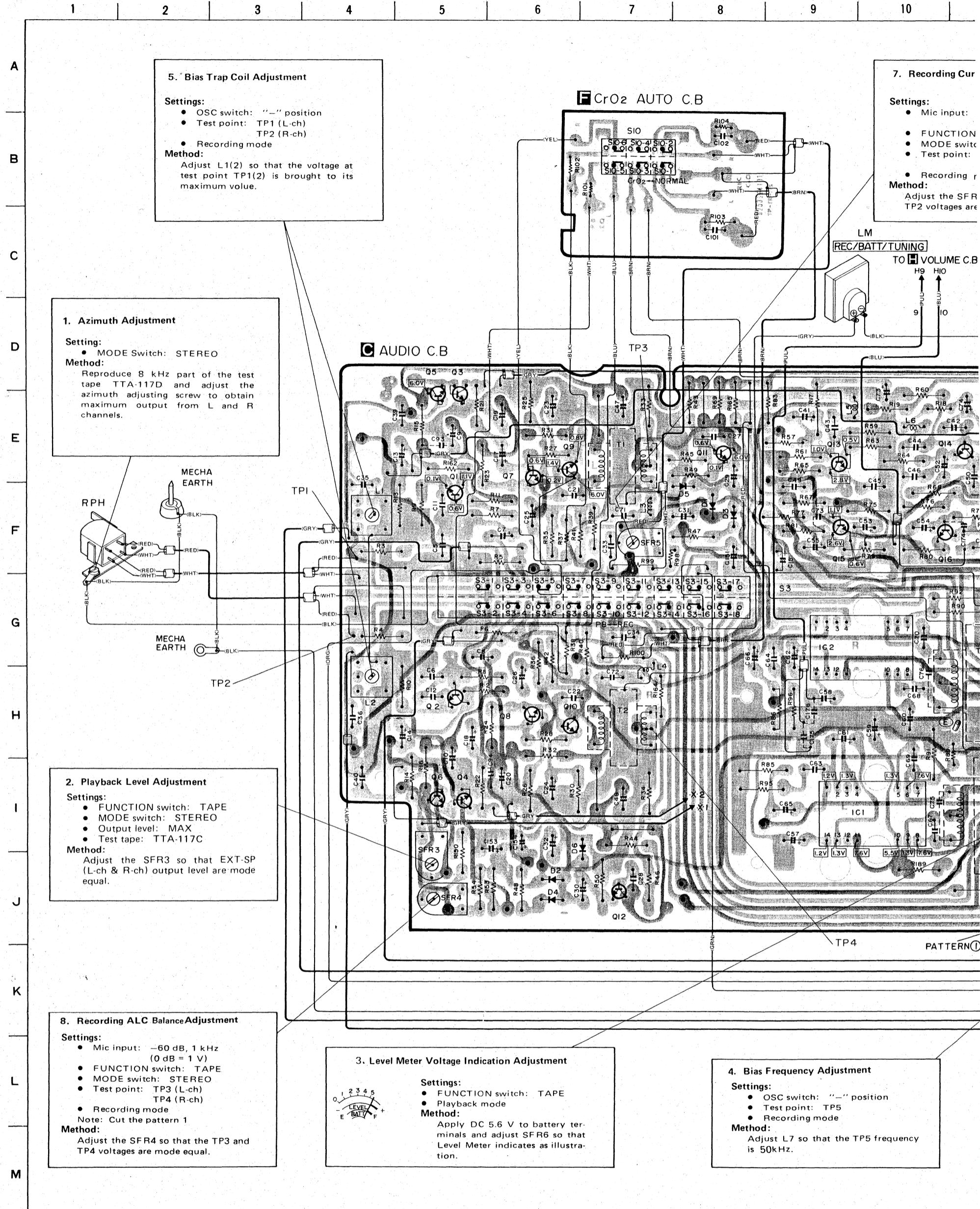


How to change to upper limit of FM frequency range from 108 MHz to 104 MHz.

Symbol No.	Description	108 MHz		104 MHz	
		C2	C9	C11	L2
	Ceramic Capacitor	20PF	88-212-200-01	33PF	88-212-250-01
	Ceramic Capacitor	22PF	88-212-210-01	33PF	88-212-250-01
	Ceramic Capacitor	24PF	88-212-220-01	27PF	88-212-230-01
	FM RF Coil	2-1/2t	82-546-601-01	Separate Coil from Bobbin 1/4t.	

The voltage is the reference value measured with a tester (50K ohms/V DC) when there are no signals.

## WIRING-2



NOTES (1) B (+) Pattern

Component side pattern Others pattern

(2) The voltage is the reference value me

An asterisk (\*) indicates that the value w

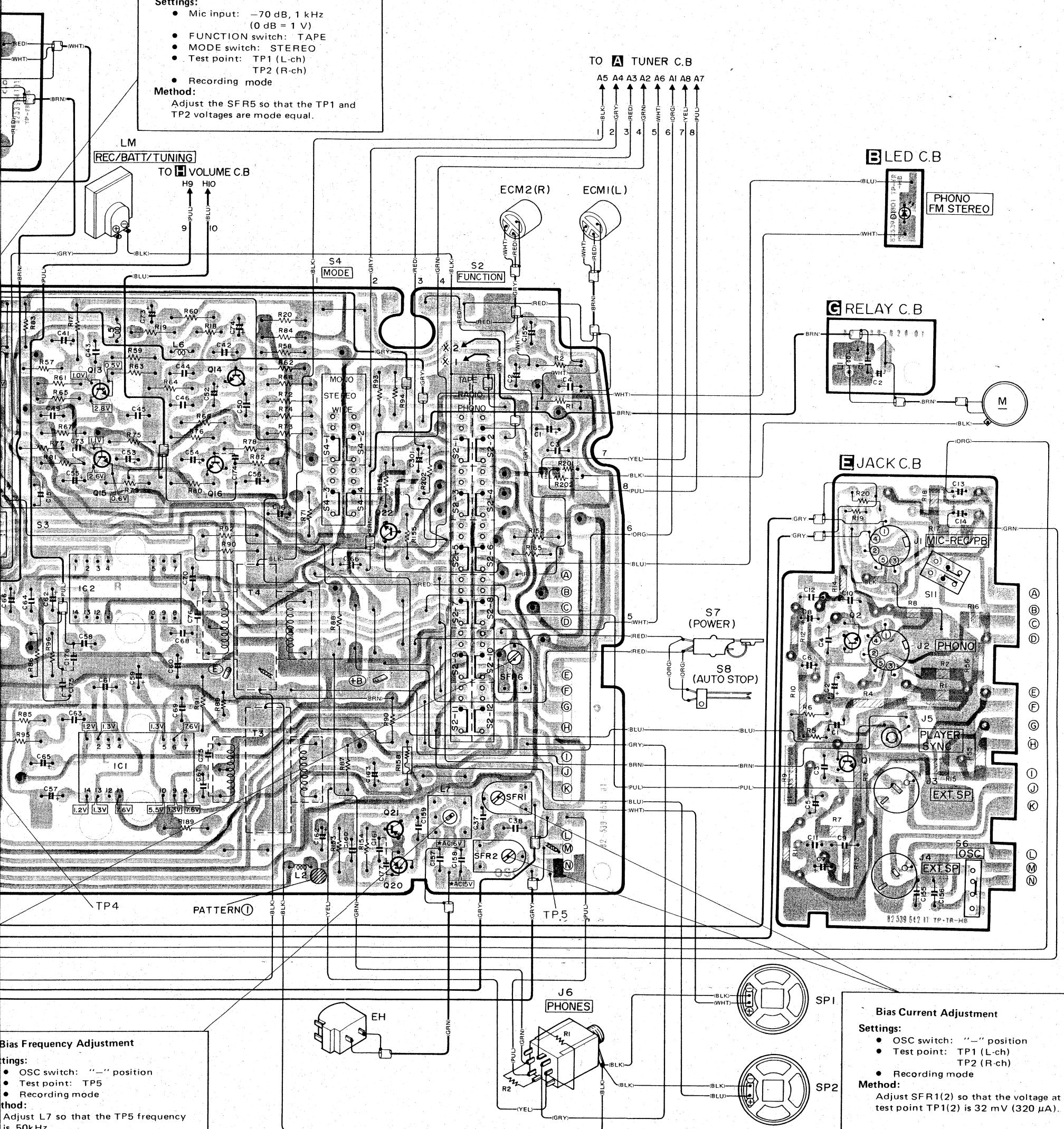
9 10 11 12 13 14 15 16 17 18 19

**7. Recording Current Adjustment****Settings:**

- Mic input:  $-70$  dB,  $1$  kHz  
( $0$  dB =  $1$  V)
- FUNCTION switch: TAPE
- MODE switch: STEREO
- Test point: TP1 (L-ch)  
TP2 (R-ch)
- Recording mode

**Method:**

Adjust the SFR5 so that the TP1 and TP2 voltages are made equal.

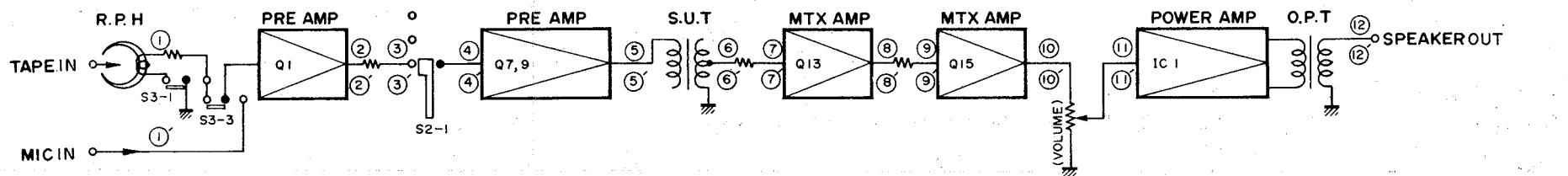


## ELECTRICAL MIAN PARTS LIST

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description			
<b>&lt; TUNER CIRCUIT BOARD SECTION &gt;</b>								
PCB-A	82-539-659-01	Tuner circuit board	Q5,6,13,14, 15,16	89-318-154-01	Transistor, 2SC1815 (Y)			
IC1	87-027-285-01	IC, HA-11251	Q11,12,22	89-318-153-01	Transistor, 2SC1815 (O)			
IC2	87-027-296-01	IC, HA-11227	Q20,21	89-200-562-01	Transistor, 2SB56 (B)			
Q1	87-026-109-01	Transistor, 2SK49E (2)	D1,2	87-027-097-01	Diode, 1S1555			
Q2	89-319-232-01	Transistor, 2SC1923 (R)	D3,4,5,6	88-052-188-11	Diode, 1S188 (FM)			
Q3	89-305-352-01	Transistor, 2SC535 (B)	L1,2	87-003-034-01	Trap coil			
Q4,5	89-316-752-01	Transistor, 2SC1675 (L)	L3,4,5,6	87-005-093-01	Coil, 4.7mH			
Q6	89-110-153-01	Transistor, 2SA1015 (O)	L7	82-418-612-01	Bias OSC coil			
Q7	89-309-455-01	Transistor, 2SC945L (Q)	L12	82-401-661-01	Choke coil, 600μH			
D1	88-052-553-01	Diode, 1S553	T1,2	87-002-103-01	Step-up transformer			
D2,3	88-051-060-01	Diode, 1N60	T3,4	87-002-102-01	Output transformer			
D4	87-027-286-01	Zener diode, HZ5C1	S2	82-539-615-01	Lever slide switch (FUNCTION)			
L1	82-539-657-01	FM antenna coil	S3	82-533-608-01	Slide switch (REC/PB)			
L2	82-546-601-01	FM RF coil	S4	82-539-616-01	Lever slide switch (MODE)			
L3	87-007-088-01	FM OSC coil, 2½t	SFR1,2,3	87-021-469-01	Semi-fixed resistor, 50kΩ-B			
L4	87-005-101-01	FM choke coil, 2.2μH	SFR4	87-021-454-01	Semi-fixed resistor, 200kΩ-B			
L5	87-005-104-01	Coil, 20μH	SFR5	87-021-467-01	Semi-fixed resistor, 10kΩ-B			
L6	87-008-182-01	FM detect coil	SFR6	87-021-470-01	Semi-fixed resistor, 100kΩ-B			
L7	82-539-651-01	SW antenna coil	<b>&lt; Resistor &gt;</b>					
L8,9	82-539-650-01	LW, MW bar antenna coil	R158	87-029-017-01	10Ω 1/4W Fuse resistor			
L10	87-007-092-01	SW OSC coil	<b>&lt; Capacitors &gt;</b>					
L11	87-007-057-01	MW OSC coil	C5,6	87-014-051-01	560pF PP			
L12	82-479-664-11	LW OSC coil	C154	87-015-318-01	0.1μF 10V Aluminum solid			
VC1~4	87-011-105-01	PVC	C25,26	87-015-319-01	0.22μF 10V Aluminum solid			
TC2,3,7,8	87-011-099-01	Trimmer	C1,2	87-015-313-01	0.33μF 10V Aluminum solid			
TC1,4,5,6	85-708-604-21	Trimmer	C73,74	87-015-322-01	0.68μF 10V Aluminum solid			
TC9	87-008-174-01	FM IFT	<b>&lt; VOLUME CIRCUIT BOARD SECTION &gt;</b>					
IFT1	87-008-164-01	AM IFT	PCB-D	82-539-605-01	Volume circuit board			
IFT2	87-008-169-01	FM ceramic filter	VR1,2	82-539-621-01	Volume, 20kΩ-B (VOLUME)			
CF1,2	87-008-162-01	AM ceramic filter	VR3,4	82-539-603-01	Volume, 20kΩ-A (TONE)			
CFT1	87-008-150-01	transformer (E model only)	VR5	82-539-622-01	Volume, 20kΩ-W (BALANCE)			
CFT1	87-028-038-01	AM ceramic filter	<b>&lt; Capacitor &gt;</b>					
LPF1,2	87-021-466-01	Low-pass filter	C3,4	87-015-319-01	0.22μF 10V Aluminum solid			
SFR1	87-021-527-01	Semi-fixed resistor, 5kΩ-B	<b>&lt; JACK CIRCUIT BOARD SECTION &gt;</b>					
SFR2	87-031-441-01	Semi-fixed resistor, 500Ω-B	PCB-E	82-539-642-01	Jack circuit board			
S1	87-033-144-01	Rotary switch (BAND	Q1,2	89-307-336-01	Transistor, 2SC733 (BL)			
PIN-1,2,3	87-032-534-01	SELECTOR)	S6	82-409-630-01	Slide switch (OSC)			
PIN-A		< Capacitors >	<b>&lt; Capacitor &gt;</b>					
C9	88-251-210-01	22pF Ceramic	C7,8	87-015-318-01	0.1μF 10V Aluminum solid			
C36	87-014-035-01	120pF PP	<b>&lt; CrO<sub>2</sub> AUTO CIRCUIT BOARD SECTION &gt;</b>					
C34	87-014-045-01	330pF PP	PCB-F	82-539-641-01	CrO <sub>2</sub> auto circuit board			
C81	87-014-049-01	470pF PP	S10	87-031-404-01	Slide switch (CrO <sub>2</sub> AUTO)			
C28	87-014-065-01	2200pF PP	<b>&lt; Capacitor &gt;</b>					
C45,46,53, 56,57,58, 59	87-017-003-01	0.022μF Semiconductor	C101,102	87-014-044-01	300pF PP			
C89	87-015-311-01	0.1μF 10V Aluminum solid	<b>&lt; RELAY CIRCUIT BOARD SECTION &gt;</b>					
C83	87-015-320-01	0.33μF 10V Aluminum solid	PCB-G	82-539-626-01	Relay circuit board			
<b>&lt; LED CIRCUIT BOARD SECTION &gt;</b>			L1	87-003-039-01	Choke coil, 36μH			
PCB-B	82-539-608-01	LED circuit board	<b>&lt; Capacitor &gt;</b>					
D1	87-026-082-01	Light emitting diode, S8169	C2	87-015-306-01	4.7μF 10V Tantalum			
<b>&lt; AUDIO CIRCUIT BOARD SECTION &gt;</b>			<b>&lt; POWER CIRCUIT BOARD SECTION &gt;</b>					
PCB-C	82-539-655-01	Audio circuit board	PCB-H	87-033-137-01	Power circuit board			
IC1,2	87-027-243-01	IC, TA-7212P	D1,2,3,4	87-027-083-01	Diode, 1S1885			
Q1,2,7,8	89-307-336-01	Transistor, 2SC733 (BL)	F1	87-035-080-01	Fuse, "T" 160mA (E model only)			
Q3,4,9,10	89-318-155-01	Transistor, 2SC1815 (GR)						

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
F1	87-035-132-01	Fuse, "T" 160mA (K model only)	M	87-045-110-01	Motor
	87-098-008-01	Fuse label, "T" 160mA	J1,2,3,4	82-539-640-11	Jack plate ass'y (MIC-REC/PB, PHONO, EXT SP).
F2	87-035-117-01	Fuse, "T" 1.25A (E model only)	J6	87-032-881-01	Jack, 6.3φ (HEADPHONE)
F2	87-035-223-01	Fuse, "T" 1.25A (K model only)	J7	87-032-434-01	AC jack
	87-098-017-01	Fuse label, "T" 1.25A	S5	87-031-330-01	Push switch (LOUDNESS)
	87-032-323-01	Fuse clamp	S7	87-031-418-01	Micro switch (POWER)
<b>&lt; MISCELLANEOUS &gt;</b>			S13	87-031-418-01	Micro switch (DC POWER) (K model only)
T1	82-539-648-01	Power transformer (E model only)	S8	87-031-393-01	Leaf switch (AUTO STOP)
T1	82-539-649-01	Power transformer (K model only)	S9	87-031-364-01	Slide switch (VOLTAGE SELECTOR)
RPH	87-046-152-01	REC/PB head	S12	87-031-408-01	Push switch (AC POWER) (K model only)
EH	87-046-127-01	Erase head		87-043-040-01	Whip antenna
ECM1,2	85-868-018-01	ECM, CMU-9			
LM	82-539-611-11	Level meter			
SP1,2	82-431-627-01	Speaker			

## LEVEL DIAGRAM



- PLAYBACK ..... The level is as per the solid black line in the graph when the TTA-112A test tape is played back.
  - RECORDING ..... The level is as per the dotted black line when a -70 dB (0 dB = 1V) signal is applied to the MIC input.
- \* Settings:  VOLUME controls: MAX  LOUDNESS switch: OFF  
 TONE control: HIGH  BALANCE control: MID

